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## EDITORIAL

# Maximising the impact of your work using infographics

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‘Science advances only if knowledge is shared’ (Warnick<sup>1</sup>)

Medical science is a cumulative process. Its progress and benefits to society rely on scientists and clinicians building on each other’s work. Scientists and clinicians unaware of practice changing literature cannot change their practice. As a science community, we spend long hours ensuring the highest standards in our research, but frequently fall short in efforts to ensure the resulting data is presented in an engaging fashion, and is shared widely.

Presenting information with graphics enhances understanding.<sup>2</sup> This is not a new concept. Florence Nightingale’s graphical representation of causes of mortality amongst British forces in the Crimean war illustrated forcefully that death from preventable disease outnumbered other causes including battle wounds. Our ability to process and recall information is superior if learnt with visual inputs.<sup>3</sup> Visual instructions for building flat-pack furniture is more effective than text-based instructions,<sup>4</sup> and a text only powerpoint is of limited appeal to most.

Information graphics or infographics utilise images and data visualisations to present research in an engaging way. Infographics add value by increasing understanding and the reach of research. Information is more likely to be retained if it was learnt from an infographic than from text alone.<sup>5</sup> Articles associated with a visual abstract are three times more likely to be viewed than articles published with text-only abstracts and significantly increase alternative metrics or ‘altmetrics’.<sup>6,7</sup>

It is well worth investing the time to get an infographic right. Researchers should take ownership of the content and design of their infographic. However, there are an increasing number of software packages that can help in the production of infographics, most

requiring only limited computing ability. Online libraries of graphics and illustrations are also available through websites such as Shutterstock and Pixabay. For specialist support, there is a well-established industry in the production of infographics, many of whom have particular expertise in scientific research communication.

Here we discuss some principles of infographic design and make some suggestions for creating engaging infographics:

**(i) Target your audience.** It is important to be clear for whom the infographic is intended to reach. Visuals that are created for a scientific, but non-specialist, audience can make the research more accessible to a broader audience. Providing context and removing technical jargon, will ensure that your work is accessible to the widest possible audience.

**(ii) Use a compelling title to attracting readers.** Consider the “breaking news headline” of your research. This is often the most impactful finding of the study, and is frequently shorter than the full article headline.

**(iii) Provide a narrative.** Effective infographics frequently use lines and arrows to guide readers through the information on a graphic. Having a clear start and end ensures that the readers process the information in the order you intend and make sure that no information is missing. Consider “nodes” of information that may relate to specific experiments or chapters in the research story. The ‘no text test’ can be used to establish whether the key messages are conveyed when the text is removed.<sup>8</sup>

**(iv) Emphasise key messages.** Key messages can be prioritised by increasing the size of the relevant component as well as increasing text size and using striking colours. Like traditional abstracts, infographics are used to provide an overview of research, but are not intended to be a substitute for reading a full research paper.

**(v) Balance images, charts and text.** It is important to balance data visualisations (pie charts, line graphs, bar graphs), images and words. Try to limit text to striking titles, brief annotations and bullets points. In general, text-light, image-dense infographics are most successful.<sup>9</sup>

**(vi) Limit the number of colours and fonts.** Use three to five complementary colours and limit the number of font types to a maximum of three.<sup>8,10</sup>

The success of any infographic depends on a well-thought-out dissemination plan. Social media is now a much used and helpful tool for the dissemination of new research and the visual appeal of infographics are particularly suited to these platforms. Infographics are shared eight times more on social media compared with text-only summaries,<sup>7</sup> and research articles accompanied by an infographic are accessed more frequently than those without.

We urge readers to start using infographics.

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